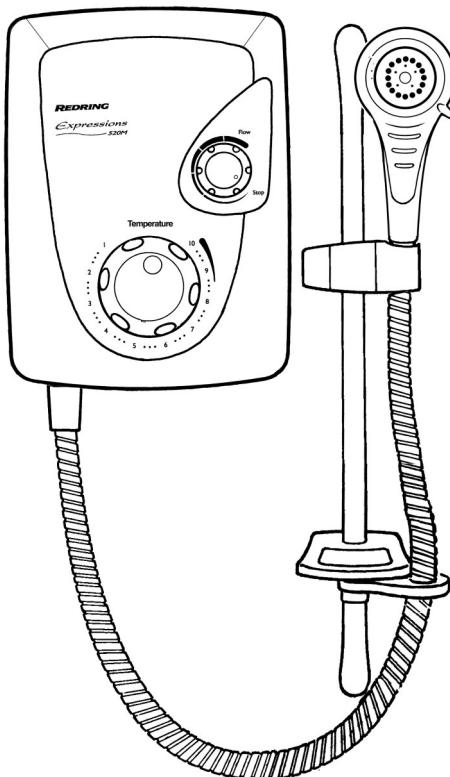


REDRING®

Expressions 520M/520TS



Manual and Thermostatic Power Shower Units

Installation instructions & User guide

IMPORTANT: This booklet should be given to the customer after installation and demonstration.

WARNING: Under no circumstances should this unit be connected to the mains water supply.

Thank you for choosing a quality 'Redring' product manufactured in Peterborough, England.

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IMPORTANT SAFETY INSTRUCTIONS

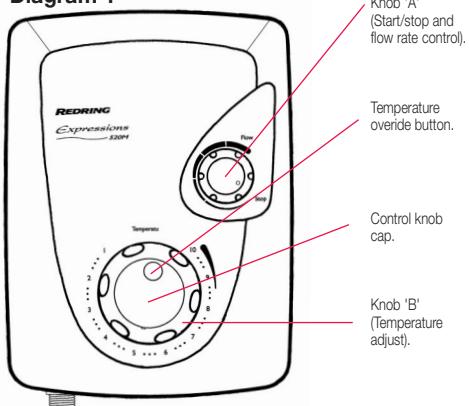
1. The Redring Expressions Power Shower is designed to boost the flow of stored domestic water, which is gravity fed from a static cold water cistern and hot water cylinder.
Under no circumstances should this unit be connected directly to the mains cold or hot water supplies.
2. The cold water cistern should have a minimum capacity of 114 Litres (25 galls). There must be a minimum head of water of 8.0 cm (3") and a maximum head of 10 Metres (33ft) between the bottom of the cold water cistern and the top of the shower unit.
Under no circumstances should any of the pipework supplying the shower unit rise above the level of the bottom of the cold water cistern.
3. The Redring Expressions Power Shower incorporates a motor that is designed for intermittent use and therefore **should not be used continuously for long periods of time**. The maximum length of time for any shower should not exceed 15 minutes. A rest period of 45 minutes is then required to allow the motor to cool down.
4. **Warning! Do not switch the shower on if you suspect it of being frozen. Wait until you are sure it has thawed out.**

HOW TO USE YOUR 'REDRING' POWER SHOWER

1. Ensure the electricity and water supplies are turned on to the unit.
2. Your shower has 2 control knobs (see diagram 1). Knob 'A' controls the Start/Stop operation and the water flow rate of the Shower unit. Knob 'B' controls the temperature of water and also incorporates a temperature limiter.
3. To start the shower turn knob 'A' clockwise from the STOP position. Adjust the control until a satisfactory flow rate is achieved. For maximum flow, turn Knob 'A' fully clockwise.
4. To adjust the temperature, turn knob 'B' clockwise to a lower number on the temperature scale for a cooler shower and anti-clockwise to a higher number on the temperature scale for a warmer shower. Please allow time for the hot water to reach the shower unit from the storage cylinder.

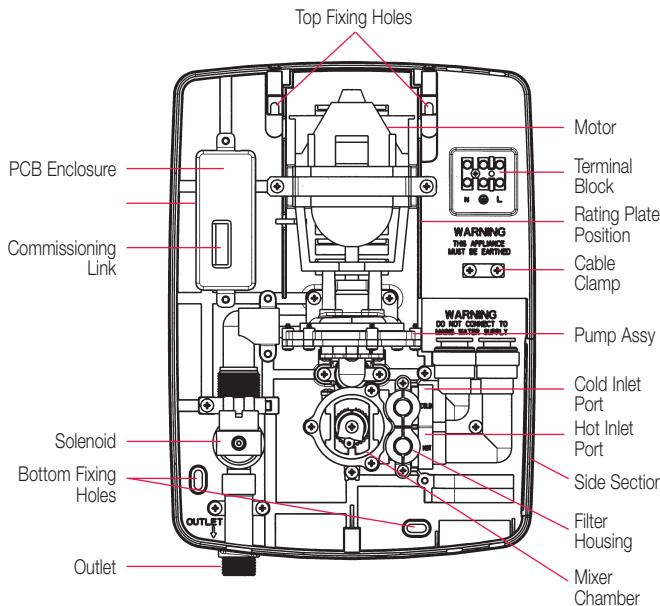
Note: It is advisable to test the temperature of the water with your hand before stepping under the showerhead.

Diagram 1



5. To stop the shower, turn knob 'A' fully anti-clockwise to the 'STOP' position.
6. Switch off the electricity at the ceiling switch or local isolator.
7. As a safety feature, a temperature limiter is provided so that the maximum working temperature of the Shower unit can be set.

Diagram 2



The limiter is factory set but can be adjusted to suit on site conditions. If the position of the limiter requires adjustment please refer to the section in the commissioning procedure (page 9).

8. To override the stop position of the limiter, press the button on Knob 'B' and continue turning Knob 'B' anti-clockwise to a higher number on the temperature scale until the desired temperature is reached.
9. If the temperature limiter has been overridden, knob 'B' MUST always be returned to the normal temperature range when the shower is

switched off. To do this, simply turn knob 'B' clockwise past the limiter position. The button does not need to be depressed when returning to the normal temperature range.

10. There are 4 defined spray settings provided by the handset (See diagram 3).

The ring can be turned in either direction to change the spray pattern.

- a) Spray: Powerful fine jets.
- b) Massage: Sparkling pulsating massage.
- c) Champagne: Soft, aerated, relaxing spray.
- d) Pulse Mix: Massage/Spray Combination.

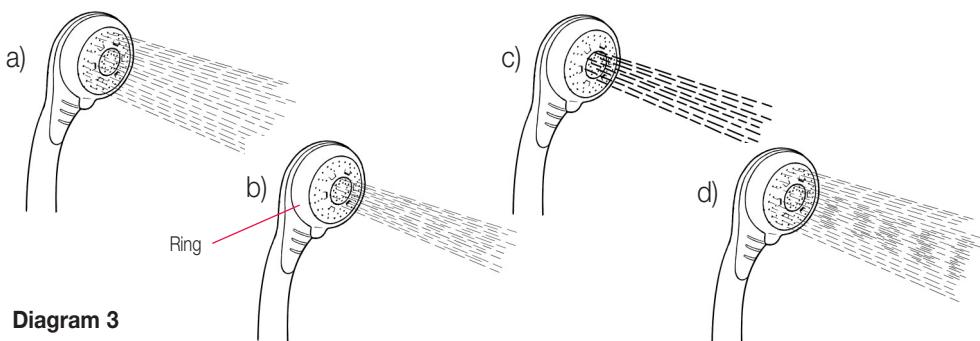


Diagram 4



The spray head rotates through approximately 140°

IN ORDER TO MAINTAIN THE PERFORMANCE OF YOUR SHOWER YOU MUST CLEAN THE SHOWERHEAD.

NOTE: After use it is normal for some water to drip from the shower head for a few moments.

HOW TO MAINTAIN YOUR 'REDRING' POWER SHOWER

All water contains particles of lime which build up in the showerhead and unit reducing the performance. It is therefore important to clean the showerhead by dipping it in a suitable descaling solution. The frequency of this will vary depending on site water conditions.

Cleaning

WARNING: Switch off the electricity at the isolating switch to avoid the shower accidentally switching on during cleaning.

It is recommended that the shower unit and accessories are cleaned using a soft cloth.

DO NOT use powerful abrasive or solvent cleaning fluids.

WHAT TO DO IF THINGS GO WRONG

Self Help

If the performance of the shower does deteriorate in service make the following checks before calling out the contractor. Any one of these simple adjustments could restore the performance.

c) Water too cold

Turn Temperature Control Knob (B) anti-clockwise to a higher number on the temperature scale (see diagram 1). Check that hot water is available in the hot water cylinder. The ideal thermostat setting for the hot water storage cylinder is 60°C (140°F).

Check that the HOT water isolating valve is open. If possible, reposition temperature limiting device so that more movement of Knob 'B' is allowed.

d) Water too hot

Turn Temperature Control Knob (B) clockwise to a lower number on the temperature scale. Check that the COLD water isolating valve is open.

e) Poor spray pattern

Clean showerhead (see opposite).

Professional Service

If the above checks fail to restore the performance, you should seek professional help.

The person who installed the shower is probably the best one to repair it and is certainly the person to contact if you have a problem in the guarantee period.

The following additional checklist is provided for the benefit of the qualified serviceman.

WARNING: SWITCH OFF THE ELECTRICITY AT THE ISOLATING SWITCH BEFORE REMOVING THE COVER TO MAKE CHECKS.

a) System will not operate

Check that the mains electrical supply is switched on.

b) Pump operates but no water is delivered

Check that water is available to both ports, and that all isolating valves are open. Check for an airlock in the pump chamber. Repeat commissioning procedure on page 9.

a) Pump operates but no water is delivered

Check that the inlet connections to the mixing chamber are piped correctly.

Check that the shower and all pipework are sited below the level of the cold water tank and that it is fully primed and is therefore not airlocked. See commissioning procedure (page 9).

| | |
|--|--|
| b) Pump operates when motor is switched off | Check for faulty potentiometer switch, (located under knob 'A' inside front cover). Switch should be open circuit when turned fully anti-clockwise. |
| c) Water too hot | Blockage in filter causing obstruction in water supply. Check and clean (see page 10). |
| d) Water too cold | Blockage in filter causing obstruction in water supply. Check and clean (see page 10). |
| e) Poor temperature adjustment | Check that the hot and cold water supplies are delivered to the correct ports. Check that water is supplied to the shower unit at balanced pressures (i.e. Hot and cold water are supplied from the same header tank). Ensure cold supply is not taken from mains. |
| f) Unit does not prime | Check that the shower and all pipework are sited below the level of the cold water tank. |
| g) Poor flow rate | Are there any restrictions in the 15mm supply (reduced diameters even for short distances). Is the pressure being lost to other services in the dwelling. Check filter for obstructions in the water supply and clean if necessary. See page 10 for details. |

REDRING AFTER SALES SERVICE

We offer a technical advisory service on the telephone to contractors and other customers with problems in the field.

Ring 0870 9000 430 (Normal Office Hours)
Spare parts can be supplied against any VISA or Access cards.

Ring 0870 9000 420 (Normal Office Hours)
Remember to quote the exact type of shower, as written on the front of the shower and on this leaflet. It may also be of use to have a note of the Catalogue Number as stated on the rating plate inside the shower (see diagram 2 for location)

Diagram 5

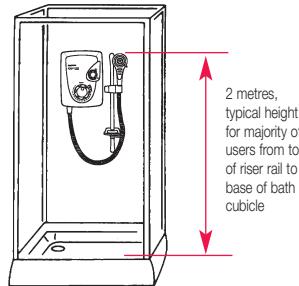
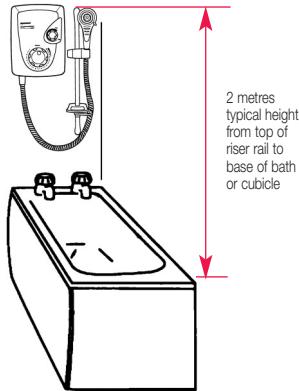


Diagram 6



INSTALLATION INSTRUCTIONS

The installation should be done by qualified personnel and checked by the Electricity Board.

WARNING: DO NOT INSTALL THE SHOWER IN A ROOM WHERE IT MAY BE SUBJECT TO FREEZING.

We recommend that the installation is done in the following sequence :-

- Fixing the shower to the wall.
- Plumbing.
- Electrical connections.

A) Fixing the shower to the wall

The Redring Expressions Power Shower is fitted with a motor and some mechanical noise can be expected when in use. The type of wall structure will affect the noise levels. Solid walls will provide quieter operation than panel or stud partition walls.

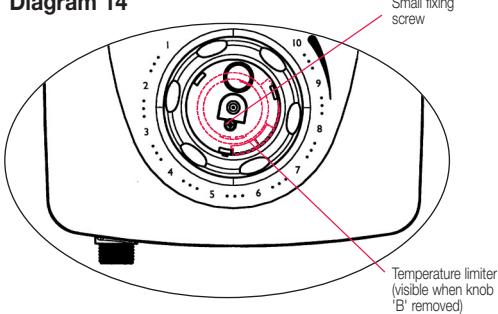
- Place the riser rail at the height recommended in diagrams 5/6 and mark its position.
- Position the heater so that the sides of the unit are vertical and that all controls can be comfortably reached whilst the shower is being used. Ensure correct orientation of the shower

unit ie. Mounted as shown in diagrams 5/6. Choose a flat piece of wall to avoid possibility of distorting the backplate thus making the front cover a poor fit.

3. Adjust the positions to get the most convenient arrangement taking the following into account : -
 - a) The possible need to use the handset over the sink for hair washing etc.
 - b) The shower unit must not be mounted in the direct spray from the handset.
 - c) The handset must not be able to come into contact with the used water in the cubicle, bath or basin. If it can, even after the hose has been retained by the hose retainer (see diagram 12), then a vacuum breaker must be fitted. It should be noted that these devices are liable to minor leakage so they must be positioned so that any drips are not detrimental
3. Fix the riser rail with screws provided. The fixing holes at the base of the brackets will be revealed by removing the plastic fronts. Assemble as shown in diagram 12.
4. Decide the position of the electrical cable to the unit. If top or bottom entry is chosen, carefully cut away the relevant walls of the backplate as shown in diagram 7.
5. Decide the position of the water pipes into the unit. If top or bottom entry is chosen, carefully cut away the relevant walls of the backplate as shown in diagram 7. If bottom entry is chosen refer to note 8 in the plumbing section.
6. If you have not yet done so, remove the front cover by undoing the retaining screws at the top and bottom of the unit. Remove Temperature Control Knob 'B' cap (see dia.1) by levering out carefully with a small flat bladed screwdriver and remove the small fixing screw as shown in diagram 14. Your shower is provided with four fixing positions in the backplate (see diag. 2). The top fixing holes are key-hole slots and the most convenient should be marked and drilled first. Tighten top screw with head protruding about 10 mm from the wall and hook the backplate over the screw head. This allows for correct and accurate alignment of your shower before marking and fixing the bottom positions. You may not wish to tighten up the

screws at this stage as the holes are elongated to allow adjustment after other connections have taken place.

Diagram 14



B) Plumbing

WARNING : - UNDER NO CIRCUMSTANCES SHOULD THIS UNIT BE CONNECTED TO THE MAINS COLD WATER SUPPLY.

The shower unit should be connected to a gravity fed water supply from a static cold water cistern with a minimum capacity of 114 litres (25 galls). There must be a minimum head of water of 8.0cm (3") and a maximum head of 10.0 metres (33ft). It is strongly advised that the shower unit is installed using independent supplies from the cold water storage cistern and hot water cylinder. The shower would then be totally unaffected by other draw off points elsewhere in the system and thus the pressure and temperature will remain more stable. The cold water supply should be taken directly from the cold water storage cistern and the hot water supply should be taken from the hot water cylinder via an Essex or Surrey flange (see diagram 10).

Under no circumstances should any of the pipework supplying the shower unit rise above the level of the bottom of the cold water cistern.

Before connecting the pipework to the shower ensure that the pipework is flushed out.

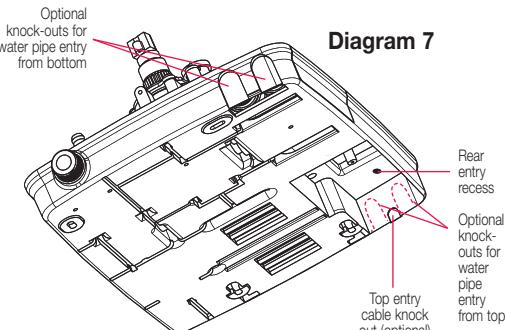
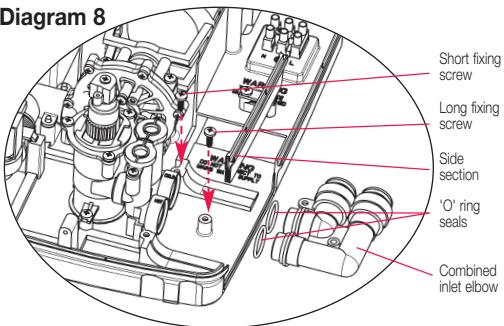


Diagram 7

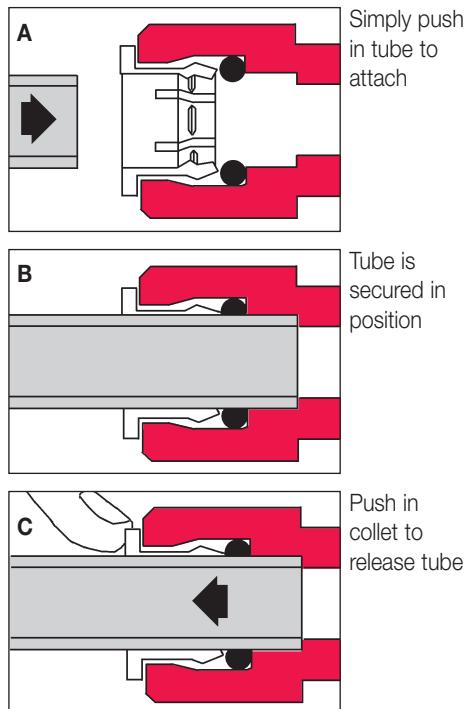
Diagram 8

1. Surrey Flange (Top entry cylinder flange)
Fitting Instructions. The hot connection to the Shower unit can be taken directly from the hot cylinder using a Surrey Flange. Diagram 10 shows how this flange should be fitted.

2. Essex Flange (Side entry cylinder flange)
Fitting Instructions. Alternatively, the hot connection to the Shower unit can be taken directly from the hot cylinder using an Essex cylinder flange and extension pipe. Diagram 10 explains how the flange should be fitted.

Connecting direct to the side of the cylinder is not recommended where a top entry immersion heater is fitted.

3. The hot connection can also be taken from the hot supply to other outlets as shown in diagram 11. The connection must be made below the ventilation pipe tee.
4. In all cases a dedicated cold water supply should be taken from the cold water cistern to the shower unit. The connection in the cistern should be made below the level of the cold water feed to the hot water cylinder. The connection should also be on the opposite side of the cistern to the float valve. This will prevent air being sucked into the pump chamber.
5. It is recommended that water council listed isolating valves are fitted between the cold water storage cistern and the shower unit and between the hot water cylinder and the shower unit (see diagrams 10/11). This will allow the shower unit to be serviced without turning off the cold water at the water stop valve and draining the cold water cistern.
6. 15mm copper pipes should be used. **Ensure all burrs have been removed from the pipes before inserting into the push fit inlet ports.** Diagram 9 illustrates the correct procedure for inserting and removing the pipes from the inlet ports.

Diagram 9

Take care to line up the inlet pipe correctly with the inlet port to avoid straining the internal 'O' ring seal.

DO NOT use solder fittings within 300mm of plastic fittings.

DO NOT insert fingers into the push-fit inlet ports. Doing so could result in injury.

7. Keep pipe runs as short as possible and use swept bends rather than right angled or restrictive fittings to optimise the performance.
8. If bottom entry has been chosen, the inlet port must be rotated through 180° into the required position. To do this unscrew the combined inlet elbow (as shown in diagram 8) and remove the side section from the shower unit. Remove combined elbow and rotate for bottom entry. Slide back into position ensuring that the 'O' seals are correctly in place. Replace side section and tighten 2 screws in elbow to lock into position.

9. With an isolating valve connected, flush the pipework through to remove particles etc. before making the final connection to the shower. A blockage in the waterways

(particularly the spray rings and filter) will prevent the shower unit working properly.

10. The shower unit should only be used with "Redring" recommended fittings.

Diagram 10

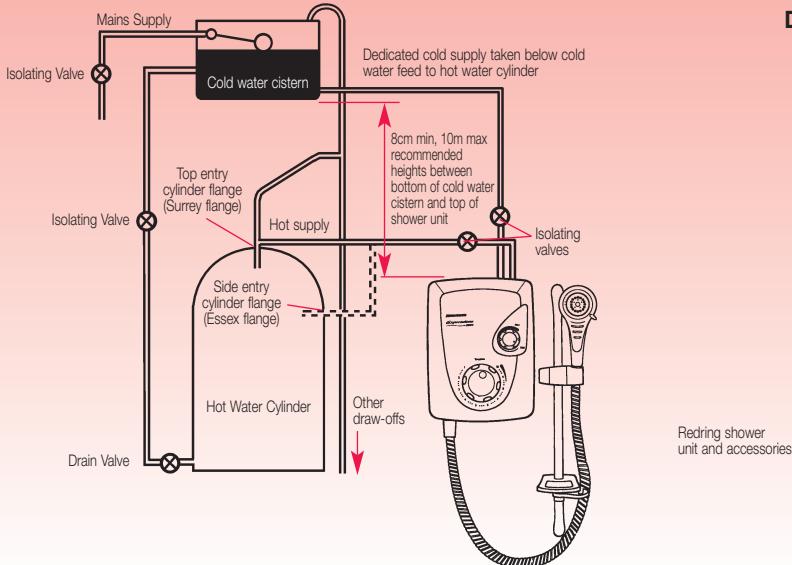
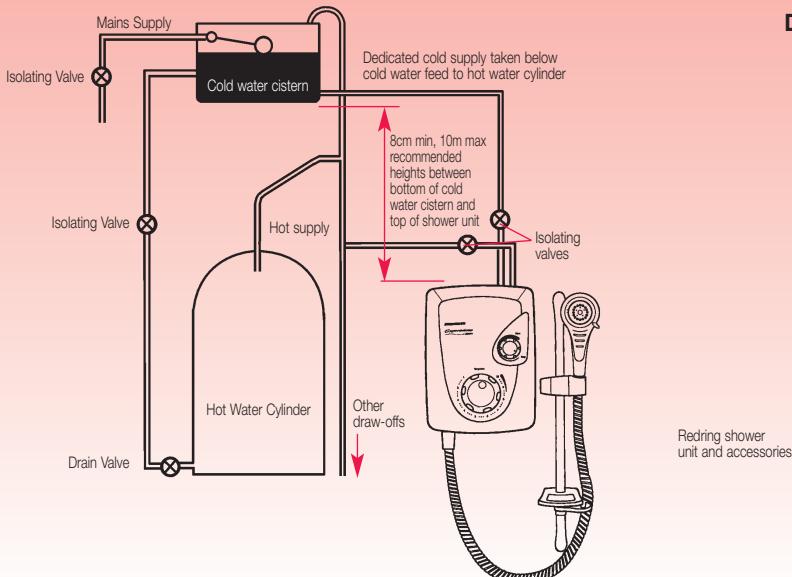


Diagram 11



C) Electrical

1. The electrical installation must be in accordance with current BS. 7671 (I.E.E. regulations).
2. The unit should be connected into a switched 3 amp double pole fused spur, with a minimum contact gap of 3mm in each pole.

The switch must be fitted outside the bathroom.

Alternatively, a double pole ceiling switch, with a pull cord and a minimum contact gap of 3mm in each pole could be used inside the bathroom.

For additional safety, it is recommended that a residual current device be used with either of the above switches.

3. The earth continuity conductor of the electrical installation MUST BE effectively connected electrically to all exposed parts of the appliances and services in the room in which the water heater is to be installed in conformity with the current BS. 7671 (I.E.E. wiring regulations).

WARNING : THIS APPLIANCE MUST BE EARTHED.

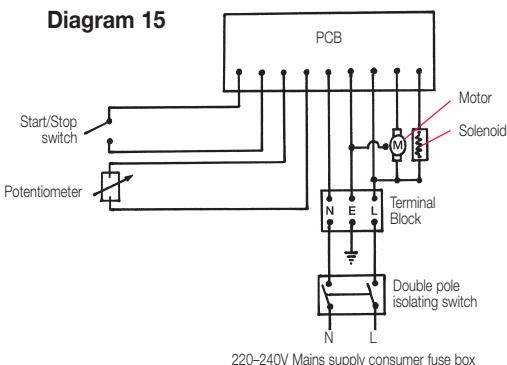
4. We recommend using 1.0mm² Twin and Earth cable for this application. Connect the mains cable in to the terminal block, ensuring that all power is switched off before connecting to the mains supply.

Recommended order : -

- a) Strip back wire approximately 6.0mm.
- b) Ensure wires are secure in the correct terminal block holes.
- c) Ensure that the mains cable is securely clamped in the cable clamp provided on the backplate.

5. Schematic wiring diagram.

Diagram 15



220-240V Mains supply consumer fuse box

FINAL INSTALLATION PROCEDURE AND COMMISSIONING

WARNING : DO NOT switch on the electricity supply until the following procedure has been completed. Failure to do so could cause the pump to run dry and invalidate the guarantee.

1. Fit the shower hose to the outlet of the shower unit. Do not connect the handset at this stage. Ensure that the water isolating valves are fully open and that the hose is directed to waste.
2. The shower unit is factory set in the commissioning mode. A commissioning link is connected to the p.c.b. (see diagram 2), which opens the solenoid without switching on the motor. This allows water to flow through the pump, thus ensuring that all air is removed.

The cover is not required to be fitted at this stage but be aware of live parts when the electricity is temporarily switched on.

3. Switch on electrical supply. After a few moments water should drip from the hose. **It may be necessary to hang the hose from the shower unit whilst priming especially if the head of the water is minimal. This will speed up the priming process.**

When water drips through the hose at a constant rate. Stop flow of water by switching off the electrical supply.

Ensure electricity is switched off. Remove p.c.b. commissioning link. Replace with the connector attached to the front cover start/stop/flow control switch.

Store commissioning link in a safe place for future use.

4. Ensure side section is in place (see diagram 2). Refit cover using 3 fixing screws. Attach handset to shower hose.
5. A temperature limiter is provided so that the maximum working temperature can be set. The limiter is factory set but can be adjusted depending on incoming water conditions.

The limiter is visible when Temperature Control Knob 'B' is removed (see diagram 14).

Gently prise away the limiter from the front cover and rotate to new position. Rotate clockwise for a cooler stop position and anti-clockwise for a warmer stop position. Ensure that the limiter is pressed firmly home. Re-assemble Temperature Control Knob 'B' over the drive on the mixer unit and fix into place with a screw. Check that it's movement is restricted sufficiently. Also check operation of temperature override button (see diagram 1). Re-fit control knob cap by positioning correctly and pressing firmly home.

6. Switch on electrical supply and then operate the shower as shown on page 2 and check : -
 - a) The shower switches on when the flow control knob 'A' is rotated and that flow is adjustable.
 - b) Temperature can be adjusted by knob 'B' and the limiter position is satisfactory (ie. Not hot enough to scald).
 - c) Operation of override button allows the temperature limiter position to be overridden.
 - d) Check again for leaks.
 - e) That the motor turns off and water stops flowing in the STOP position of knob 'A'
7. PLEASE DEMONSTRATE OPERATION TO THE USER.

Please leave these instructions with the user for future reference.

ADDITIONAL ACCESSORIES

Curtain and Rail pack

Catalogue No. 83-792802

Curtain and Rail Pack with non-slip Bath Mat

Catalogue No. 83-792801

Spare parts / accessories can be supplied against any Visa or Access cards from Redring Sales Hotline 0870 9000 420 (normal office hours).

FILTER REMOVAL AND REFITTING.

Inlet filters have been incorporated in the design of the Expression power shower which protect the internal mechanisms of the shower unit and the handset. If the performance of the shower deteriorates (ie. Flow reduction occurs) then it may be necessary to clean the filters.

WARNING : ISOLATE FROM MAINS ELECTRICITY AND WATER SUPPLY BEFORE REMOVING THE COVER TO MAKE CHECKS.

Remove shower cover as described in note 6 on page 6. The cover will be connected to the PCB via a flying lead. Carefully pull the lead from the PCB.

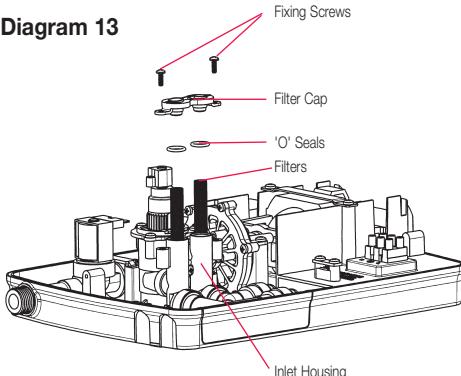
DO NOT let the front cover hang by the lead as this will damage the PCB.

The filters are positioned in the inlet housing as shown in diagram 13 below. Remove 2 fixing screws and the filter cap from the housing and remove both filters. Wash thoroughly under running water and replace in housing. Ensure that both 'O' seals are fitted to the filter cap and re-assemble cap using 2 fixing screws.

It may be necessary to re-prime the shower unit after the filters have been cleaned. Please refer to the commissioning procedure (page 9).

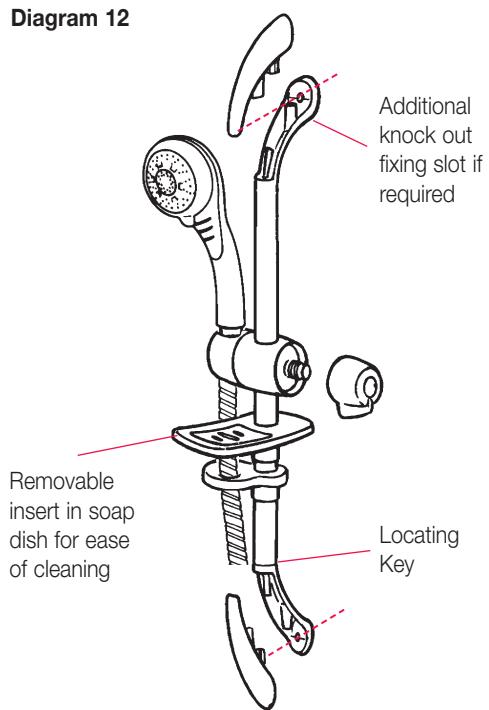
Re-fit the front cover and Temperature Control Knob 'B' as described in the commissioning procedure (page 9).

Diagram 13



ASSEMBLY OF RISER RAIL, HANDSET AND SOAP DISH

Diagram 12



Guarantee

We, Applied Energy Products Ltd., guarantee that should this power shower prove to be defective by reason of faulty workmanship or material within 24 months (outside of U.K. please contact your local distributor) of the date of purchase or commencement of hire purchase we will replace the defective parts **FREE OF CHARGE** on condition that:

- The appliance has been correctly installed and used only on the supply circuit or voltage stamped on the rating plate.
- The appliance has been used in accordance with these instructions and has not been tampered with or otherwise subjected to misuse, neglect or accident.
- The appliance has not been taken apart, modified or repaired except by a person authorised by us.
- Evidence of the date of purchase in the form of an invoice, receipt (or hire purchase documents) is included with the appliance if returned under guarantee.

'This Guarantee does not affect your statutory rights'

Full details of Terms and Conditions of Guarantee are available on request from : -

REDRING®

APPLIED ENERGY PRODUCTS LTD., MORLEY WAY, PETERBOROUGH PE2 9JJ.

TEL: +44(0)1733 456789 FAX: +44 (0)1733 310606

Website : www.applied-energy.com